Remarks/Arguments

- 1. **Elections/Restrictions:** Examiner raised a restriction requirement against claims 51 59, asserting that these claims are drawn "to a non-elected specie of figure 6 to right circular cone while prosecution has thus far been to the specie of figure 5." Applicant objects to Examiner's assertion that claims 51 59 are not drawn to the specie that has been the subject of prosecution thus far. The structure shown in FIG. 4 is constructed of elements shown in FIG. 5, which shows, in fact, a right circular cone. Applicant respectfully requests that Examiner review FIG. 5 again. That element has a vertex and a cone wall, the cone wall is formed by a straight line that sweeps in a circle about a vertical axis that extends through said vertex. The cone wall thus comprises straight lines that extend from a base edge of the cone and that intersect each other at the vertex. This is the definition of a right circular cone.
- 2. FIG. 6 is also a right circular cone, but a <u>truncated</u> and narrow right circular cone. A structure was claimed in the originally filed claims that was formed of these truncated cones, which were arranged such that the truncated vertex pointed inward toward the center point of the sphere. Claims directed toward this structure have been cancelled.
- 3. Applicant submits that this restriction is in error and respectfully requests that Examiner withdraw the restriction and examine these claims.
- 4. Applicant makes an election <u>with traverse</u> and, in order to comply with the restriction requirement, withdraws claims 51 59.
- 5. **Amendments to the Claims**: Claims 32, 33, and 35 were amended to clarify that the strut distances recited in claim 35 are the same strut distances defined in claim 32. Language was added to claim 51, to clarify the maximum / minimum limits. This

added language was taken from claim 32. These amendments introduce no new subject matter and Applicant requests approval and entry of the amended claims.

- 6. **35 U.S.C. § 103(a) Rejections**: Examiner has rejected claims 32 – 33, 35 – 36, 42, 43, 46, 47, and 60 as being unpatentable over Chamberlain (4,270,320) in view of Hein (3,359,694). Examiner asserts that Chamberlain discloses a curving element, each element having a base, a wall, and a <u>vertex</u>. The Chamberlain elements are spherical elements. Every point on the surface of a Chamberlain element is equidistant from a common fixed point of the sphere that has the radius of curvature of the element. A "vertex" is: "4. Geometry. a. The point at which the sides of an angle intersect. b. The point on a triangle opposite to and farthest away from its base. c. A point on a polyhedron common to three or more sides. d. The fixed point that is one of the three generating characteristics of a conic section." See Exhibit "A", attached, which includes excerpts from the American Heritage Dictionary of the English Language. The Chamberlain element has no point at which angles intersect, has no triangle, thus no point on a triangle farthest from the base, does not contain a polyhedron with three or more sides, and thus, has no point common to the sides, and it is not one of the three generating characteristics of a conic section (vertex, directrix, and generator). Neither the Chamberlain element nor the Chamberlain structure contains a vertex.
- 7. Examiner further asserts that Chamberlain discloses a "circular cone."
 Throughout prosecution of the present application, Examiner has repeatedly referred to the partial spherical element of Chamberlain as a "cone". Applicant objects to Examiner's stretching of the meaning of the word "cone." Claims 32, 51, and 60 are very explicit in their definitions of the cone element. Chamberlain does <u>not</u> disclose an element that is a circular cone. Chamberlain discloses a spherical structure, each

element being a partial spherical element, that is, a multi-directionally curved element, wherein each point on the surface of the element is equidistant from a common fixed point, which is the center point of a sphere. Exhibit "A" provides the definition of a cone. "1.a. A surface generated by a straight line, the *generator*, passing thorough a fixed point, the *vertex*, and moving along the intersection with a fixed curve, the *directrix*. b. The surface generated by such a generator passing through a vertex lying on the perpendicular axis of a circular directrix. Also called "right circular cone." 2.a. The figure formed by such a surface bound, or regarded as bound, but its vertex and a plane section taken anywhere above or below the vertex. ..." There is no vertex in the Chamberlain partial spherical element, there is no wall formed by a generator sweeping about a directrix. The Chamberlain element is not a cone; the Chamberlain structure is not a cone.

8. Examiner further asserts that the arrangement of the Chamberlain elements forms a "first strut distance," a "second strut distance," ... etc. The strut distances are formed by straight lines of the cone wall. The Chamberlain elements, being continuously curved elements, do not contain or disclose a single straight line thus, Chamberlain cannot disclose or teach the strut distances as claimed. Examiner also asserts that Chamberlain discloses the strut distances and directions between vertexes, as claimed in claim 35 of the present application. The plurality of elements in Chamberlain form a spherical structure. Every point on the surface of the structure is equidistant from the fixed common point of the sphere. There is no vertex on the entire structure and there is no plurality of vertexes, and, thus, there can be no strut distances that extend between vertexes.

- 9. Examiner then admits that Chamberlain does not disclose the use of conical elements. This supports Applicant's arguments, that the Chamberlain structure does not have a vertex or a plurality of vertexes. Examiner relies on Hein for a disclosure of a conical element, saying that "Hein (figure 1) discloses conical elements (I, H. and ABCGE) connected to each other to form a domical structure." and that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Chamberlain's structure to show the elements being conical elements as taught by Hein. Applicant refers to Exhibit "A" and the definition of "cone," provided above. Hein does not disclose a conical element as claimed in claims 32, 51, and 60.
- 10. Hein describes using six different types of elements, A, B, C, D-E, F-G, and H-I, to construct the geodesic structure. E is a mirror-reverse construction of D and I a mirror-reverse construction of H. All of the elements are flat triangles and each type of triangle, A, B, C, D-E, F-G, or H-I, differs from all the other types in size, shape, or angle. Hein, col. 2, lines 51 – 61. (Note: the "E-I" in Hein, col. 2, is an obvious typing error and should read "H-I".) The triangles are placed in specific arrangements and orientations to fit precisely next to each other, in order to form the polyhedrons that create the structure. No straight line of a "cone wall" of a Hein triangle extends substantially parallel to at least one straight line of said adjacent conical element so as to form together a straight strut between said vertex of said first conical element and said vertex of said adjacent conical element ... " (Fischbeck, Claim 32). For example, looking at lines identified as "24" and "28" in FIG. 1 of Hein, we see that these two lines extend from a vertex, but they are not parallel to one another because they are at an angle to each other and intersect each other at the vertex, nor do they form a straight strut between the vertexes of adjacent conical elements. Lines 24 and 26 are also not parallel to each other (the base line 24B is wider than the top line 26T), nor do they form

a straight strut between the vertexes of adjacent conical elements. And so on. No two lines of adjacent conical elements are parallel to each other <u>and</u> form a straight strut between the vertexes of the two adjacent conical elements. None of the polyhedrons overlap with adjacent polyhedrons, so as to form a straight strut between the vertexes of two adjacent conical elements. If one polyhedron were to overlap with a first adjacent polyhedron, a mismatch and a gap would invariably occur with a second adjacent polyhedron. Furthermore, the triangles must fit next to each other precisely and do not allow for any amount of displacement to provide an adjustability of the conical elements that is infinitely variable between a minimum and a maximum limit, as claimed in claim 32. This is evidenced by the fact that different sizes and shapes of the triangles are required and they must be assembled in a precise order. See Hein, col. 2, line 65 – col. 3, line 25, which describes how the angles of the triangles are calculated, based on some starting values. The Hein triangles must be fitted onto an underlying structure, examples of which are shown in Hein FIGS. 9 – 16. The underlying structure does not allow for any displacement of the elements or any adjustability.

11. The combination of Chamberlain and Hein does not render any of the claims of the present application unpatentable. The combination of these disclosures has to teach or motivate one of ordinary skill in the art to come up with the structure of the current application, i.e., has to teach, suggest, or motivate one to construct a structure comprising the conical elements that are claimed in claims 32, 51, or 60. Chamberlain discloses an arrangement of partial spherical elements that form a hemispherical structure and Hein an arrangement of planar triangles that form a geodesic dome. Neither of these structures is a structure comprising a plurality of conical elements as claimed in the present application.

- 12. Particularly with regard to claim 60, which recites a conical element that is a single element, Applicant asserts that neither Hein or Chamberlain disclose a structure comprising conical elements, as claimed, nor a conical element that is a single element.
- 13. The combination of Chamberlain and Hein teaches away from the use of conical elements to construct a geodesic structure, because a person of skill in the art, looking at the continuously curved partial spherical elements of Chamberlain on the one hand, and at the flat triangles of Hein on the other hand, would not be motivated to replace them with a conical element as claimed. The shape of the cone element allows the elements to be placed in an overlapping arrangement that forms a straight strut between vertexes, without having to align the elements precisely relative to each other. Several distinct advantages of the dome structure claimed in the present application result from the use of the cone element: (1) the structure can be formed by arranging a plurality of identical cone elements in an overlapping confirmation with a (2) great degree of freedom of variability, and (3) the cone element itself is easily formed from a flat sheet material. None of the elements disclosed in the prior art allows one to construct a structure with the ease and simplicity of the Fischbeck structure. Chamberlain's elements do not have several of the features of the claimed cone elements, (i.e., no vertex, no straight strut formation between vertexes, no straight cone walls) and they must be carefully formed as partial spherical elements. Hein and all other prior art relating to geodesic domes rely on the use of flat triangles that are carefully dimensioned and arranged in a strict and precise pattern on a grid structure. There is no variability, no overlapping arrangement, and, although the basic element is a flat triangle, the Hein and Fuller geodesic domes require triangles of numerous different shapes, sizes, and angles, that must be arranged very precisely within the grid structure. Furthermore, a person working with 3-dimensional compound curved

elements, such as the Chamberlain element, would not be able to and would not try to build a multi-angled structure, such as the Fischbeck dome, and a person working with the two-dimensional flat elements of Hein, in view of the known and pervasive technology of constructing geodesic domes with precisely configured flat panels and grid structure, would not think to use a three-dimensional cone to construct the multi-faceted geodesic-type dome.

14. Furthermore, the use of the cone elements, as claimed in the present application, lends results that are unexpected and unobvious and have a statistical and practical significance. The use of the cone elements results in a five-fold difference in volumetric capacity between the smallest possible and largest possible structures, comprising cone elements that are identical in size, shape, and number. The variability between structures depends on the strut distances. For example, assuming we are constructing Fischbeck structure S1 with 100 Cones X, "X" defining specific angle at the vertex and length of the cone wall, and the 100 Cones X are overlapped such that the strut length is at its minimum limit, i.e., a straight line of the cone wall of a first Cone X almost completely overlaps a straight line of the cone wall of a second Cone X. The resulting structure S1 has a diameter of 1D and a volume 1V. Using the very same 100 Cones A to construct a second Fischbeck structure S2, whereby the same straight line of the cone wall of the first Cone X overlaps minimally with the same straight line of the cone wall of the second Cone X, results in the structure S2 having a diameter 1.7D and a volume 5V. Diameter and volumetric capacity of the two structures, constructed of the very same 100 Cones A, are significantly different. None of the prior art structures has this capability. When the Chamberlain elements are overlapped to a maximum extent, the resulting structure reveals a smaller portion of the sphere that is defined by the radius of curvature of the elements; when overlapped minimally, the resulting structure

is a greater portion of the same sphere that is defined by the radius of curvature of the elements. In other words, the <u>diameter</u> of the Chamberlain structure will never change. With conventional geodesic structures constructed of triangular facets, such as those disclosed by Hein or others, it is not at all possible to vary the arrangement of the elements and, thus, not at all possible to vary the diameter or the volumetric capacity of the Hein structure. One can easily see that this variability is significant and has great practical application. The variability allows one to construct a structure that uses the allotted space to best advantage. It also allows one to use a thinner material for the cone elements, for one reason or another, but with greater overlap, to provide greater stability.

- 15. Applicant submits that the disclosures of Chamberlain and Hein, either alone or in combination, do not teach, suggest, or motivate one skilled in the art to use conical elements of the present invention to construct the geodesic structure as claimed in claims 32, 51, and 60 of the present application and requests that Examiner withdraw the rejections under 35 U.S.C. § 103(a) based on Chamberlain and Hein.
- 16. Claims 42, 43, 46, and 47 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Chamberlain in view of Hein and claims 44 and 45 as being unpatentable over Chamberlain in view of Hein and further in view of Fuller (3,203,144). The combination of these references does not disclose, teach, or motivate one skilled in the art to construct a structure with the elements claimed in claim 32. These rejected claims all depend from claim 32, which Applicant submits contains allowable subject matter, therefore, these claims also contain allowable subject matter. Applicant requests that Examiner withdraw these rejections and allow all claims currently presented.

- 17. **Previous Rejections:** Below is a table, listing the references relied upon in this and past office actions, to reject the claims of the present application. The purpose of this table is to illustrate to Examiner, just how many different types of elements he has cited, as either anticipating or rendering the claimed invention unpatentable, and to point out that none of them, alone or in combination, has disclosed the structure made of the conical elements claimed in this patent application. Examiner has cited references that disclosed spherical elements, polyhedral elements, polyhedral elements formed from flat triangular panels or from folded diamond-shaped elements, cone elements that point inward to the common fixed point of a sphere, and a multiconic structure. No reference nor a combination of references cited has motivated one to use a cone in the arrangement claimed in the independent claims of the present application to form the claimed structure. Some of the rejections have been redundant, in that they relied on elements that were structurally very similar. For example, Fuller, Tuitt, and Hein disclose some type of flat triangular panel arranged to form a polyhedron. At least two references disclosing circular cones pointing inward toward the common fixed point of the sphere have been cited.
- 18. The Fischbeck structure can be constructed of any number of identical cone elements greater than four and, thus, have any number of vertexes greater than four. None of the prior art teaches or discloses a structure that has this versatility, flexibility, or the simplicity of this structure. Conventional geodesic structures require precise dimensioning and arrangement of panels or struts in a specific geometric pattern that result in a predetermined number of vertexes. The Chamberlain structure has no vertexes. No combination of the prior art teaches or discloses a structure that has the versatility and simplicity of the Fischbeck structure.

Office Action	Reference	Description of Element	Comments
03/25/2003	6,098,347 (Jaeger et al.)	Flat triangular sections arranged in pyramidal frame	Successfully traversed
12/15/2003			
03/25/2003	4,270320 (Chamberlain)	Continuously curved spherical elements arranged to form a spherical structure	traversed
12/15/2003			
09/08/2004			
05/19/2005			
11/17/2005			
07/14/2006			
11/30/2006			
06/01/2007			
05/19/2005	3785066 (Tuitt)	Sheet of foldable paper, folded to form a four-sided polyhedron	successfully traversed
11/17/2005			
11/17/2005	2682235 (Fuller)	Flat triangular panels fitted into a frame	successfully traversed
02/02/2006	1009434 (Mohr)	Right circular cones pointing inward toward the common fixed point of the sphere	successfully traversed
02/02/2006	4794742 (Henderson)	Multiconic shell structure	successfully traversed
02/02/2006	3841039 (Farnsworth)	Frustoconical sections in walls of a polyhedral structure	successfully traversed
07/14/2006	5340349 (Berg- Fernstrum)	Right circular cones pointing inward toward the common fixed point of the sphere	successfully traversed
11/30/2006			
07/14/2006	3203144 (Fuller)	Laminar diamond-shaped sheets, folded to form flat triangles. Sheets have an attachment edge.	successfully traversed
11/30/2006			successfully traversed
06/01/2007			traversed
06/01/2007	3359694 (Hein)	Polyhedral elements comprising flat triangular panels. Polyhedrons form a geodesic dome structure	traversed

- 19. Applicant respectfully requests that Examiner consider the extent of the patent prosecution and acknowledge with a Notice of Allowance that none of the prior art references discloses the invention of the present application.
- 20. **Conclusion**: Claims 32, 33, and 35 were amended; no new claims were added, no claims cancelled. Applicant submits that the restriction requirement placed on claims 51 59 is in error and requests that this restriction be withdrawn and claims 51 59 examined. Arguments were presented to overcome all of the 35 U.S.C. § 103(a) rejections raised.
- 21. This amendment is being filed within the shortened statutory period of the Office Action, thus no time extension fees are due.
- 22. Applicant believes the claims as currently presented are in condition for allowance. Should, however, issues be raised in this response that can easily be resolved in a direct communication, Applicant kindly requests that Examiner call or email the Undersigned.

Respectfully submitted,

August 21, 2007

Enclosed: Exhibit "A"

Patricia M. Mathers Attorney for Applicants

Reg. No. 44,906 Bohan, Mathers & Associates, LLC

P. O. Box 17707

Portland, ME 04112-8707

Tel: 207 773 3132; Fax: 207 773 4585 Email: pmm@bohanmathers.com

THE AMERICAN HERITAGE ON A RICHARD OF THE ENGLISH LANGUAGE

WILLIAM MORRIS, Editor

Published by

HOUGHTON MIFFLIN COMPANY / BOSTON ATLANTA / DALLAS / GENEVA, ILLINOIS / HOPEWELL, NEW JERSEY / PALO ALTO

looking of an offense. 2. Law. A forgiving by a husband or wife of the other's adultery

of the other's adultery.

con-done (ken-don') tr.v. -doned, -doning, -dones. 1. To forgive, overlook, or disregard (an offense) without protest or censure. 2. Law. To make condonation of. —See Synonyms at
forgive. [Latin condônāre, to give up, forgive: com-(intensive)
+ dōnāre, to give away, from dōnum, gift (see dō in Ap--con don'er n nendix*).]

con dor (kŏn'dôr, dər) n. 1. Either of two very large New World vultures, Vultur gryphus of the Andes or Gymnogyps californianus of the mountains of California. 2. Any of several gold coins of some South American countries bearing the figure of a condor. [Spanish condor, from Quechua kuntur.]

condot-tie-re (kön'dő-tyâr'ā) n. pl. tieri (tyâr'ê). A leader of mercenary soldiers between the 14th and 16th centuries. [Italian, leader, from condotto, conduct, leadership, from Latin

[Italian, leader, from condotto, conduct, leadership, from Latin conductum, from conducere, to lead together, CONDUCT.]
con-duce (kan-doos', dyoos') intr.y. duced, ducing, duces. To contribute or lead. Used with to or toward. [Middle English conducen, from Latin conducere, to lead together, be useful, contribute: com-, together + ducere, to lead (see deuk- in Appendix*).] —con-duc'er n. con-du-cive (kan-doo'siv, -dyoo'siv) adj. Conducing; promoting; leading; contributive. Used with to. See Synonyms at favorable. —con-du-cive-ness n.

---con-du'cive-ness n.

con-duct (kan-dukt') v. -ducted, -ducting, -ducts. —tr. 1. To direct the course of; manage; control. 2. To lead or guide: conduct a tour. 3. To lead an orchestra or other musical group. 4. To serve as a medium or channel for conveying; transmit. 5. To behave. Used reflexively. —intr. 1. To act as a conductor. 2. To lead. —See Synonyms at accompany. —n. (kön'dükt). 1. The way a person acts; behavior. 2. The act of directing or controlling; management; administration. 3. The act of leading or guiding. 4. Obsolete. A guide or escort. —See Synonyms at behavior. [Middle English conducten, from Medieval Latin conducere, to escort, from Latin, to lead together: com., together + ducere, to lead (see dauk- in Appendix*).]—con-duct*i-bil'i-ty n.—con-duct*i-bie adj.

Synonyms: conduct, direct, manage, control, handle, supervise, oversee. These verbs refer to forms of authoritative guidance. Conduct can apply to the guidance of a single person: The chairconduct can apply to the guidance of a single person: The chairman conducted the hearing. It can also apply to similar action without stress on individual authority: conduct elections. Direct stresses the expert regulation of persons or activities by a leader or small group in authority: direct a political campaign. Manage stresses regulation in the sense of manipulation, sometimes of a complay organization. single person or thing but often of a complex organization; amanage a child, manage a hotel. Control can imply direction or management but more often suggests regulation in the form of restraint: police controlling a crowd; control your temper. Handle also suggests control but implies skillful maneuvering: handle a delicate affair. Supervise emphasizes broad authority: supervise a

delicate affair. Supervise emphasizes broad authority: supervise a school system. Oversee suggests broad authority exercised less directly, as by inspection and observation: oversee work. conductance (ken-dùk'tens) n. A measure of a material's ability to conduct electric charge, the real part of the complex representation of admittance (see). conduction (ken-dùk'shen) n. The transmission or conveying of something through a medium or passage, especially of electric charge or heat through a conducting medium without percentible motion of the medium itself. ceptible motion of the medium itself.

con-duc-tive (kən-dük/tiv) adj. Exhibiting conductivity. con-duc-tiv-i-ty (kön/dük-tiv'ə-tē) n. Symbol σ 1. The ability or power to conduct or transmit. 2. A measure of the ability of a material to conduct an electric charge, the reciprocal of resistly-

ity (see). con-duc-tor (kən-duk'tər) n. Abbr. cond. 1. A person who conducts or leads. 2. The person in charge of a railroad train, bus, or streetear. 3. The director of an orchestra or other musical ensemble. 4. Physics. A substance or medium that conducts heat, light, sound, or, especially, an electric charge. 5. A light-

heat, light, sound, or, especially, an electric charge. 5. A light-ning rod. —con-duc'tor-ship' n.
con-dult (kŏn'dit, -doō-lt) n. 1. A channel or pipe for conveying water or other fluids. 2. A tube or duct for enclosing electric wires or cable. 3. Rare. A fountain. [Middle English, from Old French, conveyance, from Medieval Latin conductus, es-cort, transportation, from Latin, past participle of conducter, to lead together. CONDUCT 1 lead together, CONDUCT.]
con-du-pli-cate (kön-doo'pla-kit, kön-dyoo'-) adi. Botany.

Folded in half lengthwise. [Latin conduplicatus, past participle of conduplicare, to double, fold together: com- together + duplicare, to double, DUPLICATE.]—con'du-pli-ca' tion n.

duplicare, to double, DUPLICATE.] —con'du-pli-ca'tion n. con-dyle (kŏn'dil) n. A rounded articulatory prominence at the end of a bone. [French, from Latin condylus, knuckle, from Greek kondulost.] —con'dy-lar adi. —con'dy-loid' adi. con-dy-lo-ma (kŏn-də-lō'mə) n., pl. -mas or -mata (-mə-tə). A wartlike growth near the anus or external genitalia. [New Latin, from Greek konduloma: kondulos, knuckle, condyle + -oma.] —con'dy-lom'a-tous (-lōm'a-təs) adi. cone (kōn) n. 1. Geometry. a. A surface generated by a straight line, the generator, passing through a fixed point, the vertex, and moving along the intersection with a fixed curve, the directrix. b. The surface generated by such a generator passing

and moving along the intersection with a fixed curve, the directrix. b. The surface generated by such a generator passing through a vertex lying on the perpendicular axis of a circular directrix. Also called "right circular cone." 2. a. The figure formed by such a surface bound, or regarded as bound, by its vertex and a plane section taken anywhere above or below the vertex. b. Anything having the shape of this figure. 3. a. A conical, spheroidal, or cylindrical structure borne by certain

trees, such as the pines, firs, and hemlocks, consisting of clus ters of stiff, overlapping, woody scales, between which are the naked ovules. b. Any similar fruit, such as that of the magnolism naked ovuies. b. Any similar front, such as that of the signoin or hop. 4. Physiology. A photoreceptor in the retina of the eye of. Any of various gastropod mollusks of the family Conidae. of tropical seas, having a conical, often vividly marked shell —tr.v. coned, coning, cones. To shape like a cone or cone segment. [French cône, from Latin cônus, from Greek kônos. See

kė in Appendix.*]

cone-flow-er (kön'flou'ər) n. Any of various North American
plants of the genera Rudbeckia, Ratibida, and Echinacea, having
rayed flowers with a conelike center of tubular florets.

Con-el-rad (kön'əl-rād) n. A system of defense in case of enemy

attack on the United States, in which all broadcasting is terminated, allowing only emergency AM stations to broadcast or 640 and 1,240 kilocycles. The purpose is to prevent enemy air craft from using electromagnetic signals for navigation [CON(TROL + OF) + BL(ECTROMAGNETIC) + RAD(IATION).] cone-nose (kön'nöz') n. Any of several assassin bugs; especially, Triatoma sanguisuga, of the southern and western Unite chany, Inatoma sanguisuga, of the southern and western Onities States and Mexico, having sucking mouth parts and capable inflicting a painful, toxic bite. Also called "cone-nosed bug cones-to-ga wagon (kon'is-to'ga). A heavy covered wagon with broad wheels, used by American pioneers for westward travel. Also called "Conestoga." [First built at Conestoga Pennsylvania 1] Pennsylvania.]

Co-ney Island (kō'nē). An amusement center in Brooklyn New York City, on the southwestern tip of Long Island.

conf. 1. conference. 2. confessor. con-fab (kön'fāb') n. Informal. A confabulation. —intr.v. (kā fāb', kön'fāb') confebbed, -fabbing, -fabs. Informal. To talk formally; confabulate.

formally; confabulate.

con-fab-u-late (kan-fab'yy-lat') intr.v. -lated, lating, late
1. To talk informally; chat. 2. Psychiatry. To replace fact will
fantasy in memory. [Latin confabulari : com-, together
fabulari, to talk, from fabula, story, conversation, from farili
speak (see bha-2 in Appendix*).] —con-fab'u-la'tlon n.—con
fab'u-la'tor (-la'ter) n.—con-fab'u-la-to'ry (-la-to'r's, to'r's)
con-fect (kon-fekt') tr.v. -fected, -fecting, -fects. 1. To prepai
by combining ingredients. 2. To make into a confection or pr
serve. 3. To put together; make. —n (kôn'fekt). A candy
other sweet confection; comfit. [Middle English confection
from Latin conficere (past participle confectus), to prepain other sweet contection; commit. [winding English confection Latin conficere (past participle confectus), to prepare com- (intensive) + facere, to make (see dhé-¹ in Appendix) con-fection (ken-lèk'shen) n. 1. The act of compounding mixing, or preparing. 2. A sweet preparation, such as candy preserves. 3. A sweetened medicinal compound; an election of woman's clothing. 4. A stylish article of women's clothing. -tr.v. confection

tioning, tions. To make into a confection.

con-fec-tion-ar-y (kan-fek'shan-er'e) add. Pertaining to organize sembling confections or their preparation. —n., pl. contitionaries. Variant of confectionery. con-fec-tion-er (ken-fek'shen-er) n. One who makes or

confections.

confectioners' sugar. Finely pulverized sugar with some of

con-fec-tion-er-y (kən-fek'shən-er'ë) n., pl. -ies. Also confection-ar-y (for sense 3). 1. Candies and other confections lectively. 2. The art or occupation of a confectioner. confectioner's shop. confed. confederation.

confed. confederation.
con-feder-acy (kan-féd'ar-a-sé) n., pl. -oles. 1. A unions persons, parties, or states; alliance; league. 2. A combinate for unlawful practices; conspiracy. [Middle English of federacie, from Norman French, from Latin confoederate union, from confoederare, to unite. See confederate.]
con-fed-er-ate (kan-féd'ar-it) n. 1. A member of a confederare with a spice an allot an accomplice. 3. Confederate. an ally. 2. One who assists in a plot, an accomplice. 3. Capper C. A supporter of the Confederate States of America. Synonyms at partner. —adl. 1. United in a confederacy, all 2. Of or pertaining to the Confederate States of America. (kon-fèd'a-rāt') confederated, -ating, -ates. —tr. To form a confederacy. —intr. To become part of a confederacy [Middle English confederat, from Latin confederatus.] [Middle English confederat, from Latin confederatus.] [Middle English confederate, to unite in a league: compare the following that the confederate of the confederate states of America. Abbr. C.S.A. The confederate States of America. Abbr. C.S.A. The confederation of 11 Southern states that seceded from the United States—611, including Alabama, Arkansas, Florida, Geonger Confederate States of America. an ally. 2. One who assists in a plot; an accomplice. 3. Cap

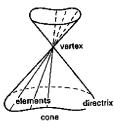
(1860-61), including Alabama, Arkansas, Florida, Geon Louisiana, Mississippi, North Carolina, South Carol Tennessee, Texas, and Virginia. Also called "the Confederate

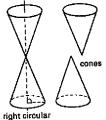
Southern Confederacy. Confederate violet. A plant, Viola priceana, of the seastern United States, having streaked pale-blue flowers confederation (kan-fed'o-rā'shan) n. Abbr. confed. 1. A of confederating or a state of being confederated. 2. A grounded the confederates, especially of states or nations, united to confederates. connecterates, especially of states or nations, united of common purpose. —the Confederation. 1. The union of American States under the Articles of Confederation (1781) 2. The federal state created in Canada in 1867 by the St. North America Act, comprising New Brunswick, Nova St. Ontario, and Quebec, and now including the ten Canada in 1867 and Canada in 1867 by the St. Nova St. Ontario, and Quebec, and now including the ten Canada in 1867 by the St. Nova St. Ontario, and Quebec, and now including the ten Canada in 1867 by the St. Nova S

provinces. —con-fed'er-a'tion-ism' n. —con-fed'er-a'tion-con-fer (kon-für') v. -ferred, -ferring, -fers. —tr. 1. To be (an honor or degree, for example). Used with on or 2. Obsolete. To compare. —intr. To hold a conference



condor Gymnogyps californianus







cone Above: Geometric cones Center: Shell of Conus aulicus. textile cone Below: Cone of Pinus taeda,

loblolly pine

road to Calvary. 2. The handkerchief itself. 3. Any similar rep-

resentation of Jesus' face on a textile fabric.

ve-ron-i-ca² (ve-ron'i-ke) n. In bullfighting, a maneuver in ve-ron-i-ca² (va-ron'i-ka) n. In bullfighting, a maneuver in which the matador stands immobile and passes the cape slowly before the charging bull. [Spanish, from the name VERONICA.] Ve-ron-i-ca (va-ron'i-ka). A feminine given name. [Medieval Latin, from Late Latin Veraiconica, Saint Veronica, whose handkerchief preserves the true image of Jesus' face: Latin vērus, true (see weros in Appendix") + iconicus, of an image, from icon, image, ICON.] Ver-ra-za-no (věr'a-zā'nō: Italian vār'rā-tsā'nō). Giovanni da

Ver-ra-za-no (ver'a-zā'nō; Italian vār'rā-tsā'nō), Giovanni da. Also Ver-ra-za-no. 1485?-1528? Florentine explorer of Atlantic

Ver roc chio (və-rō'kē-ō'; Italian vār-rôk'kyō), Andrea dei. Also Verroc chio (və-rō'kē-ō'; Italian vā-rôk'kyō). 1435-1488.

Florentine sculptor and painter.

Fiorentine sculptor and painter.

ver-ru-ca (va-rōo'ka) n., pl. -cae (-sē). 1. Medicine. A wart.

2. Biology. A wartlike projection, as on the back of a toad or on some leaves. [Latin verrica. See wer-i in Appendix.*]

ver-ru-cose (va-rōo'kōs', věr'a-kōs') adj. Also ver-ru-cous (-kəs).

Covered with warts or wartlike projections. [Latin verrucōsus, from verricās verpains.]

from verrūca, VERRUCA.]

vers versed sine.

Ver-sailles (var-si', vĕr-). A city of France, about 14 miles southwest of Paris; the site of the palace of Louis XIV and of the signing of the treaty between the Allies and Germany after World War I (1919). Population, 95,000.

Ver-sant (vūr'sant) n. 1. The slope of one side of a mountain or mountain range. 2. The general slope of any region. [French, from Latin versāns, present participle of versāri, to turn frequently. See versatile.]

from Latin versans, present participle of versari, to turn frequently. See versatile.]

ver-sa-tile (vur'sa-tel; chiefly British vur'sa-til') adj. 1. Capable of turning competently from one task, subject, or occupation to another; having a generalized aptitude. 2. Having varied uses or serving many functions: "The most versatile of vegetables is the tomato" (Craig Claiborne). 3. Inconstant or variable; changeable. 4. Biology. Capable of moving freely in all directions, as the antenna of an insect or the loosely attached anther of a flower. [French, from Latin versatilis, from versari, frequentative of vertere, to turn. See wer-3 in Appendix.*] —ver'sa-tile-ly adv. —ver'sa-til'-ty, ver'sa-tile-ness n. verse' (vurs) n. Abbr. v., ver. 1.a. A line of words arranged in accordance with the principles of prosody; one line of poetry. b. A subdivision of any metrical composition, as a stanza of a

accordance with the principles of prosody; one line of poetry.

b. A subdivision of any metrical composition, as a stanza of a hymn or of a long poem. 2. Metrical or rhymed composition; poetry. 3. Light metrical composition seen as distinct from serious poetry. 4. A specific type of metrical composition, such as elegiac verse, blank verse, or free verse. 5. One of the numbered subdivisions of a chapter in the Bible. —v. versed, versing, verses. Rare. —tr. To versify (something). —intr. To versify; to write poetry. [Middle English vers, from Old English fers and Old French vers, from Latin versus, "a turning of the plow," furrow, line, verse, from the past participle of vertere, to turn. See wer-3 in Appendix.*]

verse2 (vûrs) tr.v. versed, versing, verses. To make familiar, knowledgeable, or skilled; to school. Used with in. Usually used in the passive: He is well versed in history. [From versed, acquainted with, from Latin versatus, past participle of versari, to

quainted with, from Latin versea in nistory. If rom versea, acquainted with, from Latin versatus, past participle of versari, to turn, occupy oneself with. See versatile.] versed cosine. Abbr. covers A trigonometric function of an angle equal to one minus the sine of that angle. Also called "Coversine".

"coversine." versed sine. Abbr. vers A trigonometric function of an angle equal to one minus the cosine of that angle. Also called "versine." [New Latin sinus versus, "inverse-order sine," from Latin versus, turned. See verse (poetry).] ver-si-cle (vûr'si-kel) n. 1. A short verse. 2. A short sentence spoken or chanted by a priest and followed by a response from the congregation. [Middle English, from Old French versicule, from Latin versiculus, diminutive of versus, VERSE.] ver-si-col-or (vûr'si-kûl'ər) adj. Also ver-si-col-ored (-kûl'ərd). 1. Having a variety of colors; variegated. 2. Changing in color; iridescent. [Latin : versus, turned, changed (see verse) + COLOR.]

ver-si-fi-er (vûr'sa-fi'ar) n. One who versifies. See Synonyms at

poet.

ver-si-fy (vûr'sa-fi') v. -fiad. -fylng. -fies. —tr. 1. To change from prose into metrical form. 2. To treat or tell in verse; write a poem about: "Narrative poets liked to versify Bible stories" (George Sherburn). —intr. To write verses. [Middle English] (George Sherburn). —intr. To write verses. [Middle English versissen, from Old French versisser, from Latin versissear: versulen, from Oid French versifier, from Latin versificare: versus, verse + -FY.] —ver'si-fi-ca'tion n. ver-sine (vûr'sin') n. Trigonometry. A versed sine (see). [Contraction of versed SINE.]

traction of versed sine.]

version (vur'zhan, -shan) n. Abbr. v., ver. 1. A description, narration, or account related from the specific or subjective viewpoint of the narrator: Her version of the accident differed from his. 2. a. A translation. b. Usually capital V. A translation of the entire Bible or of a part of it: the King James Version. 3. A variation of any prototype; variant: "At home we played soccer... and sometimes a version of hurling" (Brendan Behan).

4. An adaptation of a work of art or literature into another medium or style: Lamb's version of Shakespeare. 5. Medicine.

a. Manipulation of a fetus in the uterus to bring it into a favorable position for delivery. b. A deflection of an organ, such as the uterus, from its normal position. (Old French, from Medicaval Latin versio, conversion, translation, from Latin vertere, to turn, change. See wer. 3 in Appendix.*) —ver sion-al adj. turn, change. See wer-3 in Appendix.*] —ver sion-al adj. vers li-bre (ver le/br). Free verse.

ver-so (vûr'sō) n., pl. sos. Abbr. v., vo. 1. Printing. The left-hand page of a book or the reverse side of a leaf as opposed to the recto (see). 2. The back of a coin or medal. Compare obverse. [Latin versō (folio), "(the page) being turned," the page one sees when the leaf is turned over, ablative of versus, turned

See versus.]
verst (vûrst) n. A Russian measure of linear distance, equivalent
to about two-thirds of a mile. [French verste, from Russian
versta, "line." See wer-3 in Appendix.*]
ver-sus (vûr'sas) prep. Abbr. v., vs. 1. Against. Used in law and
in sports: the plaintiff versus the defendant; the Mets versus the
Giants at Shea Stadium. 2. As an alternative to; in contrast
with: death versus dishonor. [Medieval Latin, from Latin,
turned toward, from the past participle of vertere, to turn. See
wer-3 in Annendix.*]

wer- in Appendix. I wert (vûrt) n. 1. a. In English forest law, any green vegetation that can serve as cover for deer. b. The right to cut such vegetation. 2. The color green, especially in heraldry. [Middle English verte, from Old French vert, green. See verdant.] wer-1 in Appendix.*]

vert. vertical.

ver-te-bra (vûr'ta-bra) n., pl. -brae (-brē) or -bras. Any of the bones or cartilaginous segments forming the spinal column. [Latin, joint, vertebra, "something to turn on," from vertere, to turn. See wer-3 in Appendix.*]

ver-te-bral (vûr'ta-bral) adj. 1. Relating to or of the nature of a vertebra. 2. Having or consisting of vertebrae.

vertebra. 2. Having or consisting of vertebrae.

vertebral canal. Anatomy. The spinal canal (see).

vertebral column. Anatomy. The spinal column (see).

vertebrate (vûr'ta-brāt', -brit) adj. 1. Having a backbone or spinal column. 2. Of or characteristic of a vertebrate or vertebrates.

—n. Any member of the subpylum Vertebrata, a primary division of the phylum Chordata that includes the fishes amphibiage reptiles birds and mammals all of which primary division of the payman Chordata that includes the fishes, amphibians, reptiles, birds, and mammals, all of which are characterized by a segmented bony or cartilaginous spinal column. [Latin vertebrātus, from vertebra, Vertebra.]

vertex (vůr'těks') n., pl. -texes or -tices (-to-sêr'). 1. The highest point of anything; apex; summit. 2. Anatomy. a. The highest point of the skull. b. The top of the head. 3. Astronomy. The highest point reached in the apparent motion of a celestial head. A. Geometry. S. The point at which the sides of an angle body. 4. Geometry. a. The point at which the sides of an angle poory. 4. Geometry. a. The point at which the sides of an angle intersect. b. The point on a triangle opposite to and farthest away from its base. c. A point on a polyhedron common to three or more sides. d. The fixed point that is one of the three generating characteristics of a conic section. [Latin, whirl, crown of the head, highest point, from vertere, to turn. See wer-3 in Appendix.*]

ver-ti-cal (vur'ti-kel) adj. Abbr. vert. 1. At right angles to the horizon; extending perpendicularly from a plane; upright. Comhorizon; extending perpendicularly from a plane; upright. Comhorizon; extending perpendicularly from a plane; upright. Compare horizontal. 2. Pertaining to or situated at the vertex or highest point; directly overhead. 3. Anatomy. Of or pertaining to the vertex of the head. 4. Economics. Pertaining to, composed of, or controlling all the grades or levels in the manufacture and sale of a product. —n. Abbr. vert. 1. A vertical line, plane, circle, or the like. 2. A vertical position. [French, from Late Latin verticals, from Latin vertex, vertex.] —vertical viv. vertical valv.

from Late Latin verticalis, from Latin vertex, VERTEX.] —ver'ti-cal'i-ty, ver'ti-cal-ness n. —ver'ti-cal-ly adv.

Synonyms: vertical, upright, perpendicular, plumb. These adjectives are compared as they mean at right angles, or approximately so, to the plane of the horizon or to the plane of a supporting surface. Vertical and especially upright are often used to signify contradistinction to what is horizontal or situated crosswise. In such a general sense they do not always imply a strictly right angle but an approximation instead. Perpendicular and plumb are generally used with precision and thus specify an angle of 90 degrees.

specify an angle of 90 degrees. vertical circle. Any great circle on the celestial sphere, passing through the zenith and the nadir, and thus perpendicular to the

vertical file. Ephemeras, such as pamphlets, sheets of paper, vertical nie. Epnemeras, such as pamphlets, sheets of paper, and mounted photographs, that have been collected and arranged for ready reference, as in a library.

vertical union. A labor union in which workers are organized according to the industry for which they work instead of by their particular skill or cast.

their particular skill or craft.

verticles, Alternate plural of vertex.

verticil (vûr'to-səl) n. Biology. A circular arrangement, as of flowers or leaves, about a point on an axis; a whorl. [Latin verticillus, the whirl of a spindle, diminutive of vertex, whirl,

verticilias-ter (vûr'ta-sa-läs'tar) n. Botany. An inflorescence resembling a whorl but actually arising in the axils of opposite leaves. [verticil-late (vûr'ta-sa-läs'tar) n. Botany. An inflorescence resembling a whorl but actually arising in the axils of opposite leaves. [verticil-late (vûr'ta-sil'ft, -āt') adj. Also verticil-lated (vār'ta-sil'ft, -āt') adj. Also verticil-lated (-sil'atte-ly adv. —ver'ticil-la'tion n. vertigil-nous (vartij'a-nas) adj. 1. Revolving; whirling; rotary. 2. Affected by vertiging, dizzy. 3. Tending to produce vertigiovertiginous speed. 4. Liable to quick change; unstable; inconstant. [Latin vertiginōsus, from vertig's (stem vertigin-), vertigo.] —ver-tig'-nous-ness n. ver-tigo (vùr'ti-gō') n., pl. -goes or vertigin-nous-ness n. ver-tigo (vùr'ti-gō') n., pl. -goes or vertigins (var-tij'a-nāz'). 1. The sensation of dizziness and the feeling that oneself of one's environment is whirling about. 2. A confused, disoriented state of mind. [Latin vertigō, "a whirling," from vertere, to turn. See wer-3 in Appendix.*] ver-tu. Variant of virtu. ver-vain (vūr'vān') n. Any of several plants of the genus Verbena. having slender spikes of small blue purplich or white

vervain (variant of virtu.

vervain (var'van') n. Any of several plants of the genus Verbena, having slender spikes of small blue, purplish, or white flowers. [Middle English verveine, from Old French, from h hat/hw which/i nit/i nie/ir pier/i judge/k kick/l lid.

Latin verbēna, often in plural verbēnae, se olive, myrtle, or laurel. See wer-3 in Ap verve (vûrv) n. 1. Energy and enthusias: ideas and especially in artistic endeavor 2. Vitality: liveliness; vigor. 3. Rar French, from Old French, fancy, fan Latin verba, plural of verbum, word. Set vervet (vûr'vit) n. A small, long-tailed copithecus pygerythrus, having a yellow coat. [French, short for vert grivet : ver, GRIVET.) Ver-woerd (for-voort'), Hendrik Frensi

Minister of South Africa (1958-66); ass ver-y (věr'ē) adv. Abbr. v. V. 1. In a h exceedingly: very happy. 2. Truly. Uses superlatives: the very best way to proceed same one.—adf. verier, -iest. 1. Comp. the very end of his career. 2. Identical; characteristics were out of tune with the p day (John F. Kennedy). 3. Used as an the importance of the thing described crumbled. 4. Particular; precise: the 6. Mere: The very mention of the name wal; caught in the very act. 7. Archaic. "Like very sanctity she did approach" (St.

rightful: the very vengeance of the gods. ray, from Old French ventriai, true, re vērāius (unattested), from Latin vērus, 1 pendix.*]

Usage: Very (adverb) is sometimes en rectly a past participle used predicative tions: He was very tired (or very discoura generally acceptable when the particip nature of an adjective, as in the foregoin if the participle is defined separately a functions readily as an adjective in othe ally be preceded by very. When the par-not meet such tests and consequently reform, it is generally preferable to replace much, greatly, or a like term that fits th an example in writing, the following is a of the Usage Panel: He seemed very v of the Osage Fanci. The seemed very very examples, however, are termed unaccep percentages indicated: She was very dish 87 per cent). Call us if you are very delay were very inconvenienced by it (by 80). phrasings include much (or greatly) dis seriously delayed; much (or very much) very high frequency. Abbr. VHF, whf quencies falling between 30 and 300 r very low frequency. Abbr. VLF, vlf A be falling between 3 and 30 kilocycles per Ver-y pistol (věr'ē). A pistol used fo flares. [Invented by Edward W. Very naval officer.]

Ve-sa-li-us (vi-să'lē-əs), Andreas. 1514 mist and surgeon; regarded as father of ve-si-ca (va-si'ka, -sē'ka) n., pl. -cae (-sē) the urinary bladder or the gallbladder. blister. See udero- in Appendix.*] -ve ves-i-cant (ves'i-kent) n. A blistering ag agent, as mustard gas, used in chemical ing blisters.

wes-i-cate (vés'i-kāt') v. -cated, -cating, -intr. To be or become blistered. [L: Latin vēsīca, bladder, blister, VESICA.]

ves-i-ca-to-ry (věs'i-ka-tôr'ē, -tôr'ē) ac vesicatories. A vesicant. ves-i-cle (věs'i-kəl) n. 1. A small blau 2. Anatomy. A small bladder or sac, es fluid, 3. Pathology. A scrum-filled blist the skin. 4. Geology. A small air pock volcanic rock during solidification.

Latin vēsicula, diminutive of vēsīca, ve:
ve-sic-u-lar (ve-sīk'ye-ler) adj. 1. Of oi
2. Composed of or containing vesicles.

vesicle. -ve-sic'u-lar-ly adv.

ve-sic-u-late (va-sik'ya-lat') v. -lated, -l make vesicular. —intr. To become ve ya-lit, -lat). Full of or bearing vesicle:

Ves-pa-sian (věs-pā/zhən). Latin name Vespasianus. A.D. 9-79. Emperor of R. ves.per (ves'por) n. 1. A bell used to s pers, Also called "vesper bell." 2. An

pers. Also called "vesper bell." 2. Al Pertaining to, appearing in, or approp vesper serenade. [From Vesper.]

Ves-per (ves'por) n. Formerly, the even English, from Latin, evening, the evenit Appendix.*]

ves-per-al (ves'por-al) n. 1. A book co

hymns to be used at vespers. 2. A cove altar cloth between services.

Ves.pers (ves.pers) pl.n. Also Ves.pers seven canonical hours (see). b. The time prayer, in the late afternoon or evening. held in the late afternoon or evenin Evening Prayer (see). 4. Roman Catholion Sundays or holy days which includ

t tight/th thin nath/th this, bathe/ŭ cu